



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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RECENT TRENDS IN THE JAPANESE FISHERY FOR SQUID,
OMMASTREPHES BARTRAMI

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October 1981

This report was prepared in September 1981 by William G. Court who compiled and translated information from various Japanese fishery press items and information gathered from various Japanese industry and government sources. The report was prepared at the request of the Honolulu Laboratory through the courtesy of Robert T. B. Iversen, Regional Fishery Attache, American Embassy, Tokyo, Japan. Tamio Otsu, Southwest Fisheries Center, Honolulu Laboratory, translated parts of the text accompanying the tables and illustrations that were left untranslated by W. Court.

Japan's larger squid jigging boats have been jigging for aka-ika (red squid), Ommastrephes bartrami, in the North Pacific Ocean since 1975. The drift gill net fishery developed very rapidly in 1978 and soon expanded, at one point, to include 1,000 boats. This fishery has been a source of controversy and problems almost since its inception--the primary problem being competition with the less efficient squid jigging boats. However, by the action of the Central Fisheries Adjustment Committee, which met from late May 1981, the free status of this fishery has ended, i.e., participation in the fishery must be authorized, as of August 1, 1981.

The reasons for this action include the fact that the drift gill net fishery competes severely with the existing squid jigging fishery for the same species. Also, because of the extremely high efficiency of the drift gill net fishing method, the conservation of the resource cannot be left to itself. Furthermore, as salmon is an incidental catch of this fishery there is apprehension that this will lead to international problems.

The new regulations provide that boats may not participate in the fishery without a permit, which is issued to selected boats by the Minister of the Ministry of Agriculture, Forestry and Fisheries. Boats must be between 50 and 500 tons; the regulated fishing area is north of lat. 20°N. However, within this area, fishing is to be allowed only east of long. 170°E. The mesh size of the nets is to be greater than 10 cm. Landings may be made at any 3 of 30 designated landing ports, subject to approval of the ports selected by the particular boat.

This Central Fisheries Adjustment Committee action is the result of a 2-year controversy between the organizations representing the drift gill net fishery and the squid jigging fishery. The Japan Fisheries Agency has mediated the controversy.

The 1981 drift gill net squid season is 5 months long, from August through December, and the 1982 season will run from June for 7 months. Many of the drift gill net permits have been obtained in exchange for squid jigging permits as a means of reducing the number of squid jigging participants. In September 1981 the All Japan Large Vessel Squid Jigging Association announced a one-third reduction in the number of its member boats from 212 to 140 boats. As of mid-September 1981 a total of 534 boats held permits in the new fishery, including 163 boats over 100 tons and 371 under 100 tons.

Landings of red squid were 144,000 metric tons (MT) (200,000 MT round weight equivalent) of which over 95% were frozen. The landings forecast for 1981 are from 125,000 to 144,000 MT (180,000 to 200,000 MT round weight equivalent). The very low price of squid in 1980 forced many drift gill net boats to work overtime to process the squid on board and to freeze only the mantles, as this would bring a higher return in the market place and enable the boats to at least minimize their deficit.

Table 1.--The number of fishing days (N) and catch per day's fishing per vessel (CPUE) of the large aka-ika jigging vessels of Kanagawa Prefecture. (Source of data: Kanagawa Prefectural Fisheries Experimental Station.)

		July	August	September	October	November	Total
N (days)	1979	150	454	419	426	133	1,582
	1980	77	309	300	172	17	875
CPUE (No. of cases)	1979	104	227	236	147	76	184
	1980	292	274	377	358	282	327

Table 2.--The catch per day's fishing per vessel of aka-ika by the large vessels. (Source of data: Tohoku Regional Fisheries Research Laboratory and Kushiro Fishery Experimental Station.)

Unit: Metric ton

Fishing gear	Year	July	August	September	October	November	Total
Jigging	1978	1.630	2.920	2.090	2.160	2.770	2.270
	1979	(0.846)	2.464	2.697	1.830	(0.551)	2.178
	1980	3.548	2.986	3.842	3.394	--	3.438
Gill net	1979	4.225	4.914	5.105	4.899	(4.082)	4.823
	1980	(10.921)	(14.856)	(10.173)	(5.744)	(6.324)	(10.697)

Note: 1) Parentheses indicate catches made during less than 100 fishing days.

2) The 1980 gill net data are based on catches of one vessel only. This vessel used 600-800 shackles of gill net; mesh size 115 mm.

Table 3.--Annual landings of aka-ika.

Unit: Metric ton

	Total landings ¹			Estimated landings by fishing method	
	Fresh	Frozen	Total	Jigging	Drift gill net
1975	20,176	20,988	41,164	41,164	0
1976	31,035	53,145	84,180	84,180	0
1977	29,813	91,955	121,768	121,768	0
1978	52,939	92,369	151,308	100,000-110,000	40,000-50,000
1979	30,785	93,867	124,652	70,000-80,000	40,000-50,000
1980	10,745	133,546	144,291	69,105	75,186
	(10,745)	(177,155)	(187,900)	69,105	118,795

Note: 1) Based on data provided by the National Federation of Fisheries Cooperatives (Zengyoren). The 1980 landings include squid gutted on board (tsubonuki). The figures in parentheses were based on estimates of ungutted squid weights obtained as follows:

- a. Since virtually all of the fresh squid were taken by jigging, these were all considered to be ungutted.
- b. It was estimated that 43.7% of the frozen squid had been taken by jigging and 56.3% by gill net. All of the jig-caught squid were assumed to be ungutted. Of the gill net-caught squid, 41.2% were estimated to be ungutted and 58.4% were tsubonuki or squid gutted on board.
- c. To convert from gutted squid to ungutted weight, the gutted squid weight was multiplied by 2.0.

Table 4.--The number of fishing days (N) and catch per day's fishing per vessel (CPUE) of aka-ika by the jigging vessels of Aomori Prefecture.

		1976	1977	1978	1979	1980
N (days)	Medium-sized freezer vessel	7,722	10,492	16,185	11,568	3,025
	Large-sized vessel	2,756	4,697	7,812	7,125	6,400
	Total	10,478	15,189	23,987	18,693	9,425
CPUE ¹ (No. of cases)	Medium-sized freezer vessel	191	216	139	147	191
	Large-sized vessel	230	233	217	174	262

¹Fishing period = July-December.

Data source: Aomori Prefectural Fisheries Experimental Station.

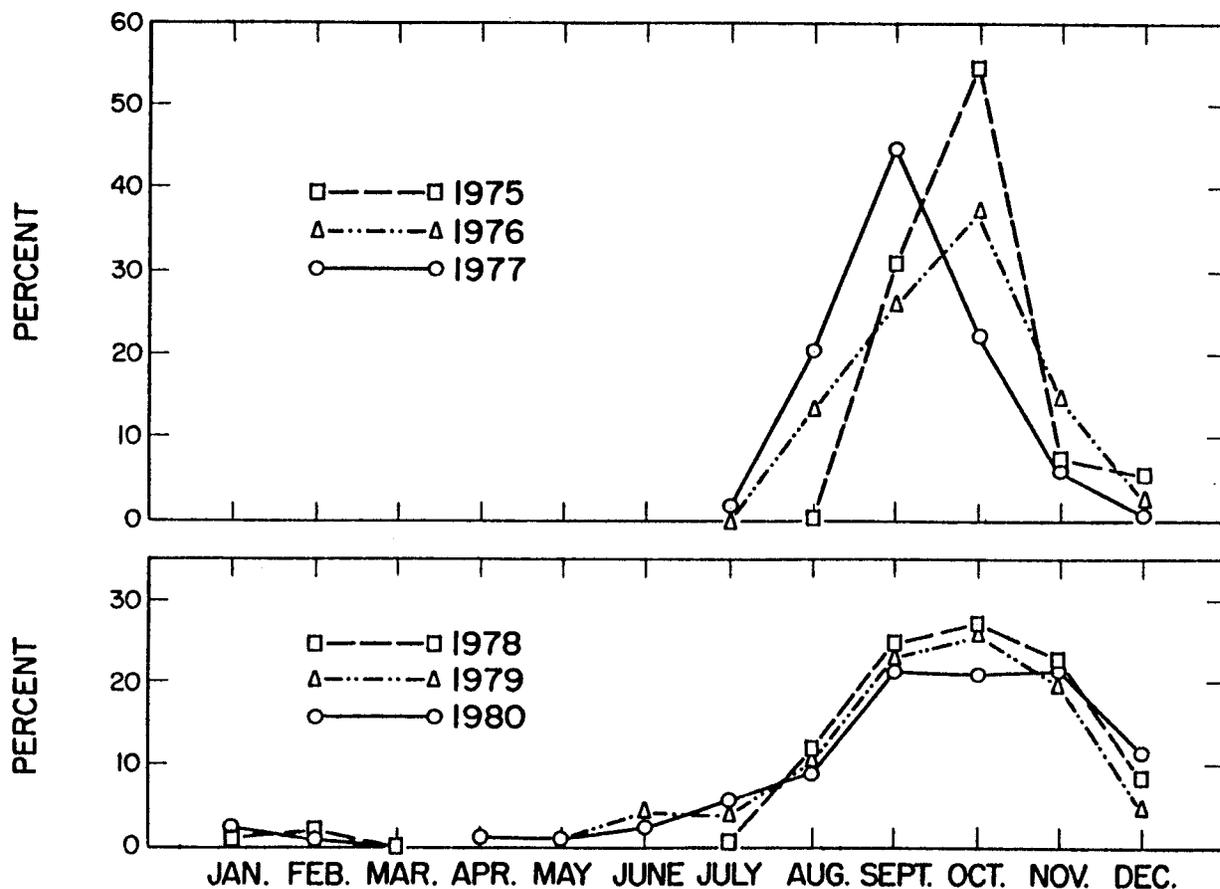


Figure 1.--Comparison of monthly landings of aka-ika. (Top panel = jigging only; lower panel = jigging and drift gill netting.) Data for 1975 provided by Tohoku Regional Fisheries Research Laboratory's Hachinohe Branch Station; 1976-80 data provided by the National Federation of Fisheries Cooperatives (Zengyoren); and the 1980 data include tsubonuki (squid gutted on board).

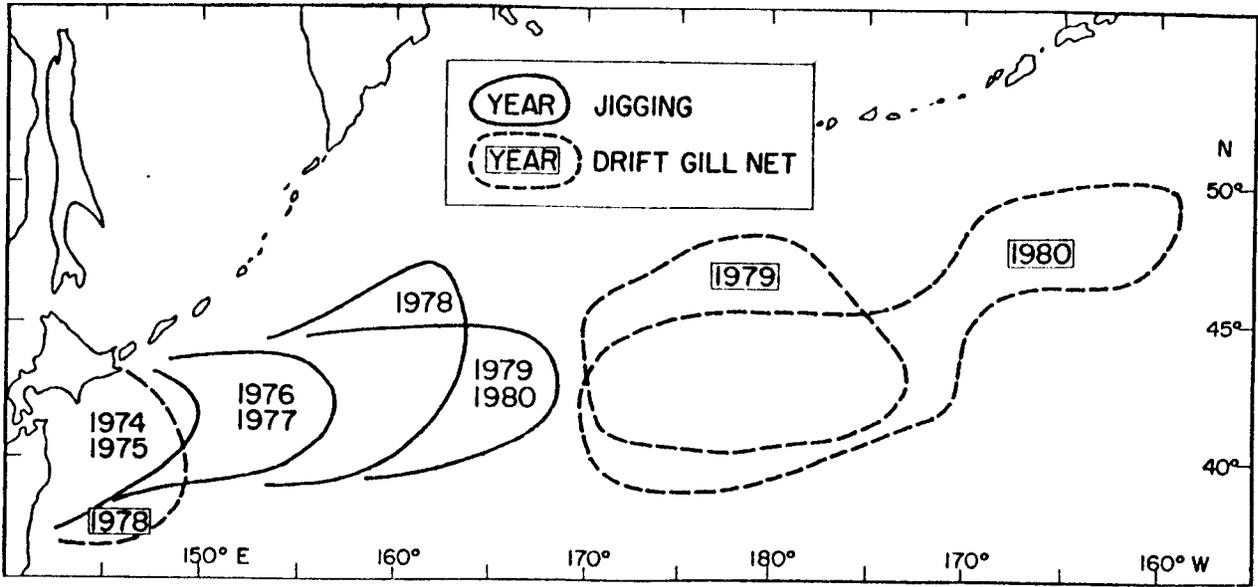


Figure 2.--Annual change in fishing grounds for aka-ika.

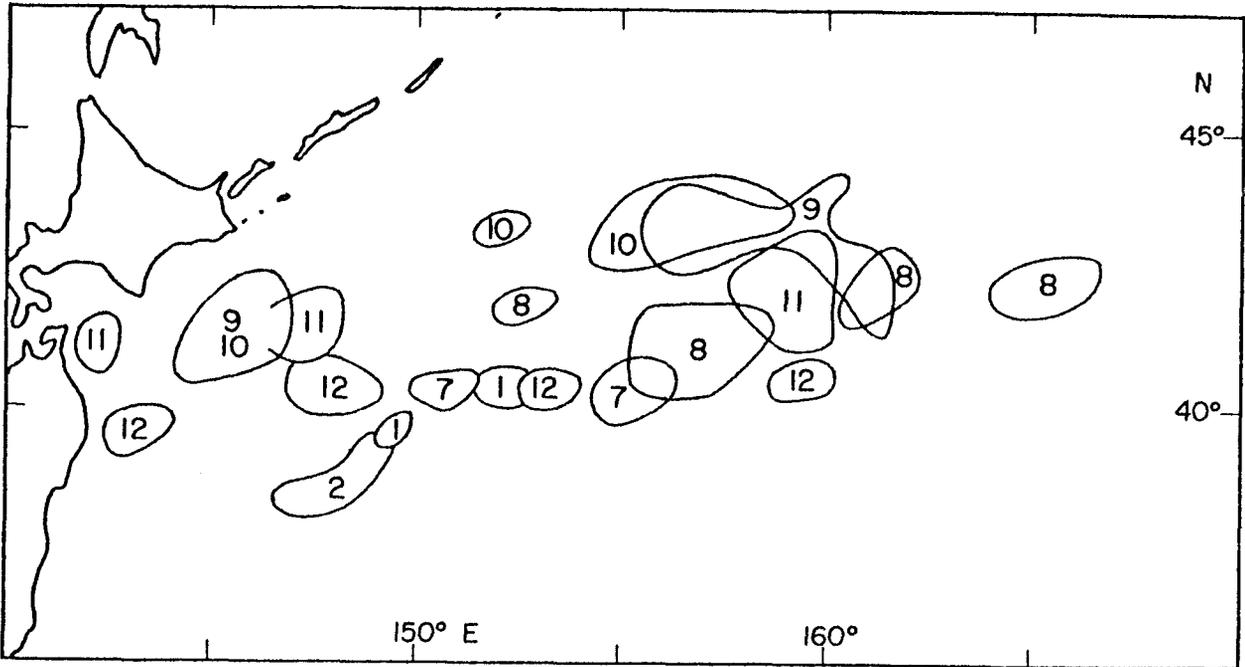


Figure 3.--The main jigging grounds for aka-ika by month, from July 1980 through February 1981. (Source of data: Tohoku Regional Fisheries Research Laboratory, Kushiro Fisheries Experimental Station, Aomori Prefectural Fisheries Experimental Station, and Fishery Situation Report Service Center. Legend: Numbers = months.)

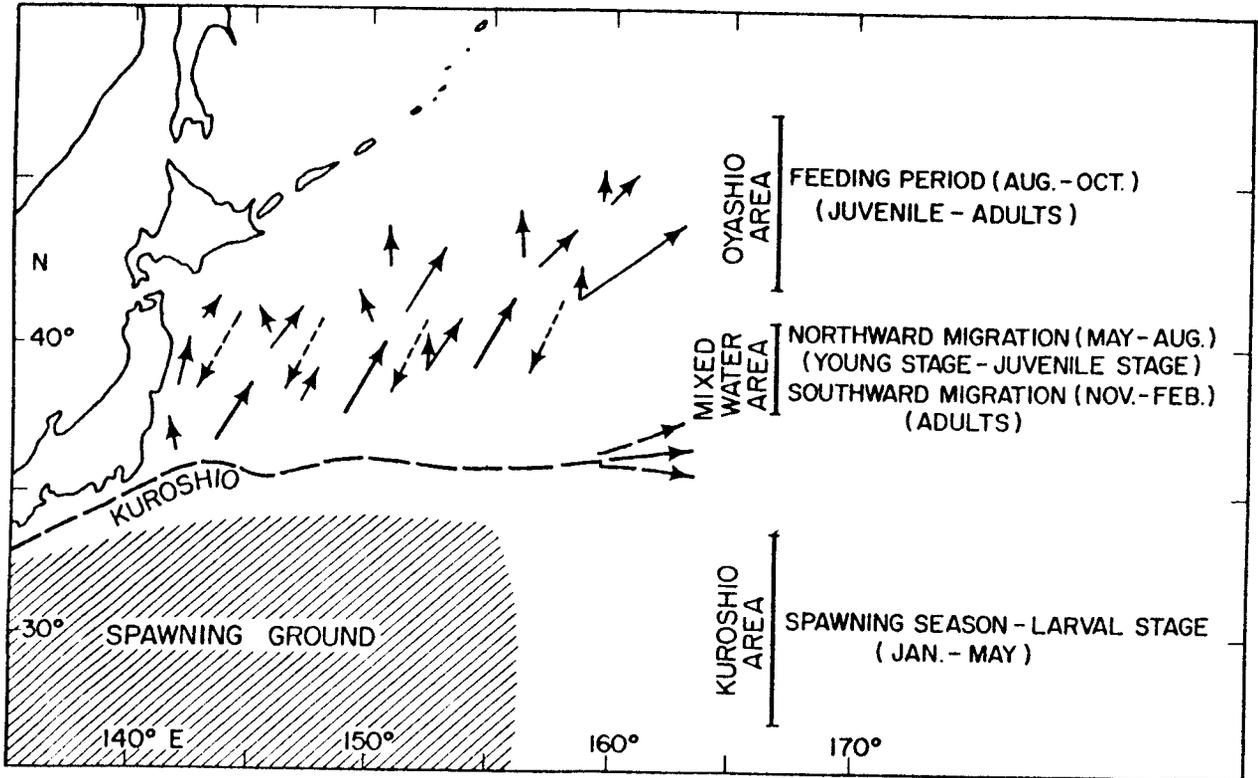


Figure 4.--The migration pattern of aka-ika.